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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/700,458 | 11/05/2003 | Ming-Hung Hsu | 3313-1050P | 6403 |
| 2292 | 7590 | 03/16/2006 | EXAMINER | |
| BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | MORRISON, THOMAS A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3653 | |
| DATE MAILED: 03/16/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/700,458 | HSU, MING-HUNG |
| | Examiner | Art Unit |
| | Thomas A. Morrison | 3653 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 December 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5-10 and 15-20 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-4 and 11-14 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,419,543 (Nakamura et al.).

Regarding claim 1, Figs. 1-2 show a paper feed mechanism with automatic compensating feeding force for supplying paper to a pickup roller (21), comprising:

a swing gear assembly (including 62, 63 and 64) which includes a plurality of gears (62 and 64) and at least one linkage bar (63) and has one end fixed (i.e., one end of 63 is fixed to 62a) and other end swingable (i.e., other end of 63 and gear 64 are swingable) to transmit rotational driving power from a driving power source (51);

a lifting plate (11) for holding the paper having one end fixed (near 12) and other end movable; and

a cam (including 14) located below the lifting plate (11) is selectively engaged with the swingable end of the swing gear assembly to rotate (i.e., 14 is selectively engaged with 64 of the swing gear assembly);

wherein the swing gear assembly (including 62, 63 and 64) rotates the cam (including 14) to lift or lower the movable end of the lifting plate; and

wherein the cam (including 14) which has non-equal radius profile is turned to lift or lower the movable end of the lifting plate to change the relative distance and an automatic compensating contact force between the paper held on the lifting plate and the pickup roller.

Regarding claim 2, the cam can be considered to include both 14 and 53. As such, Figs. 2 shows that the cam (including 14 and 53) has gear teeth formed on a peripheral surface thereof.

Regarding claim 3, the cam can be considered to include (14) and cam (14) is coaxial with a gear (53) and the swingable end of the swing gear assembly (including gear 64 of the swing gear assembly) is selectively engaged with the gear (53).

Regarding claim 4, Fig. 1 shows that the swing gear assembly is to locate the cam (14) below the lifting plate (11), and to rotate the cam (14) to lift or lower the movable end of the lifting plate (11).

Regarding claim 11, Figs. 1-2 show a paper feed mechanism (Figs. 1-2) with automatic compensating feeding force for supplying paper to a pickup roller (21), comprising:

a swing gear assembly (including 62, 63 and 64) which includes a plurality of gears 62 and 64) and at least one linkage bar (63) and has one end fixed (i.e., one end of 63 is fixed to 62a) and other end swingable (i.e., other end of 63 and gear 64 are swingable) to transmit rotational driving power from a driving power source (51);

a lifting plate (11) for holding the paper having one end fixed (near 12) and other end movable; and

a cam (including 14) which has non-equal radius profile located below the lifting plate is selectively engaged with the swingable end of the swing gear assembly (i.e., 14 is selectively engaged with 64 of the swing gear assembly) and rotatable to lift or lower the movable end of the lifting plate (11) to change the relative distance and an automatic compensating contact force between the paper held on the lifting plate (11) and the pickup roller (21).

Regarding claim 12, the cam can be considered to include both 14 and 53. As such, Figs. 2 shows that the cam (including 14 and 53) has gear teeth formed on a peripheral surface thereof.

Regarding claim 13, the cam can be considered to include (14) and cam (14) is coaxial with a gear (53) and the swingable end of the swing gear assembly (including gear 64 of the swing gear assembly) is selectively engaged with the gear (53).

Regarding claim 14, Fig. 2 shows that the cam (14) is located below the lifting plate (11) such that the movable end of the lifting plate (11) is lifted or lowered when the cam (14) rotates.

Response to Arguments

2. Applicant's arguments filed December 23, 2005 have been fully considered but they are not persuasive. With regard to independent claims 1 and 11, applicant argues that, in the present invention, a paper feeding mechanism is provided

that includes a swing gear assembly, a lifting plate and a cam without a spring element. The cam has a non-equal radius profile and is located below the lifting plate and engages with the swingable end of the spring gear assembly. The cam can rotate to drive the movable end of the lifting plate upwards or downwards to change a relative distance between the holding paper and the pick-up roller and to provide for automatic compensating contact force. This feature is not seen in the reference, where the actual holding force is provided by a spring which can become stretched over time and thus cannot always provide sufficient contact force.

In response, it is first noted that independent claims 1 and 11, as now amended, both recite that the cam which has non-equal radius profile is turned/rotatable to lift or lower the movable end of the lifting plate to change the relative distance and an automatic compensating contact force between the paper held on the lifting plate and the pickup roller. With the way this recitation is worded in claims 1 and 11, the change in the relative distance and the automatic compensating contact force can be satisfied either during lifting or during lowering of the lifting plate. If either one of these conditions occurs, the limitation is met in claims 1 and 11. With this in mind, it is noted that column 4, lines 22-37 and column 5, line 51 to column 6, line 5 of the Nakamura et al. patent clarify that the top sheet of paper of the stack is transported from the lifting plate 11 until the top end of such transported sheet reaches element 23. Then, the cam 14 is rotated clockwise against the force of the spring 13 to lower the movable end of the lifting plate 11 (i.e., lower the lifting plate 11 so that there is a change in the relative distance and the contact force between the paper on the lifting plate and the

pickup roller). Finally, the same sheet having one end located at element 23 and the opposite end located upstream of element 23 is transported to a print head 3. In other words, the cam 14 is rotated such that the movable end of the lifting plate 11 is lowered to change the relative distance and the automatic compensating contact force between the paper held on the lifting plate 11 and the pickup roller 21, as now set forth in independent claims 1 and 11.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathy Matecki can be reached on (571) 272-6951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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